

1. (Currently amended) An optical scanner comprising:
a scanner housing;
a first self-contained optics assembly including a
first housing within the scanner housing including a
horizontal aperture, wherein the first optics assembly
generates first scan lines for scanning a bottom side, and
further scanning an operator side, a leading side, and a
trailing side of an item; and

a second self-contained optics assembly including a
second housing within the scanner housing including a
substantially vertical aperture, wherein the second optics
assembly generates second scan lines for scanning a customer
side, and further scanning the leading side, the trailing
side, and a top side of the item;

wherein the first and second self-contained optics
assemblies include

a plurality of primary pattern mirrors for
directing first scanning light beams through the horizontal
and vertical apertures to create first groups of the first
and second scan lines; and

a plurality of secondary pattern mirrors for
reflecting second scanning light beams from the primary
pattern mirrors through the horizontal and vertical
apertures to create second groups of the first and second
scan lines.

2. (Original) The scanner of claim 1, wherein the first self-contained optics assembly includes a first mirrored polygon spinner, and the second self-contained optics assembly includes a second mirrored polygon spinner.

3. (Original) The scanner of claim 2, wherein the first mirrored polygon spinner is located towards a customer side of the first self-contained optics assembly, and the second mirrored polygon spinner is located towards a bottom side of the second self-contained optics assembly.

4. (Original) The scanner of claim 1, wherein the first self-contained optics assembly includes a first mirror basket, and the second self-contained optics assembly includes a second mirror basket.

5. (Original) The scanner of claim 1, wherein the first and second optics assemblies are substantially bilaterally symmetrical about a centerline.

6. (Original) The scanner of claim 1, wherein the first self-contained optics assembly includes a first laser, and the second self-contained optics assembly includes a second laser.

7. (Original) The scanner of claim 1, wherein the first and second optics assemblies generate a total of fifty-six scan lines.

8. (Original) The scanner of claim 7, wherein the first self-contained optics assembly generates twenty-four scan lines, and the second self-contained optics assembly generates thirty-two scan lines.

9. (Original) The scanner of claim 1, wherein the first self-contained optics assembly includes a first detector, and the second self-contained optics assembly includes a second detector.

10. (Original) The scanner of claim 9, further comprising control circuitry in the scanner housing for obtaining bar code information from first and second electrical signals from the first and second detectors.

11. (Original) The scanner of claim 1, further comprising control circuitry in the scanner housing for obtaining bar code information from a first signal from the first self-contained optics assembly and a second signal from the second self-contained optics assembly.

12. (Currently amended) The scanner of claim 1, wherein the first self-contained optics assembly comprises:

~~a mirrored polygon spinner for directing a first set of the first scanning light beams to a first set of the primary pattern mirrors;~~

~~a plurality of primary pattern mirrors for directing scanning light beams from the mirrored polygon spinner;~~

~~wherein the primary pattern mirrors direct first scanning light beams through the horizontal aperture to create a first group of the first scan lines; and~~

~~a plurality of secondary pattern mirrors for reflecting second scanning light beams from the primary pattern mirrors through the horizontal aperture to create a second group of the first scan lines.~~

13. (Original) The scanner of claim 12, wherein the mirrored polygon spinner comprises facets of different angles which divide the first scan lines into pairs.

14. (Original) The scanner of claim 12, wherein the second group of the first scan lines scan the leading, trailing, customer, operator, and bottom sides of the item.

15. (Original) The scanner of claim 12, wherein the

first group of the first scan lines scan the operator and bottom sides of the item.

16. (Original) The scanner of claim 12, wherein the first self-contained optics assembly comprises twelve primary pattern mirrors and six secondary pattern mirrors.

17. (Currently amended) The scanner of claim 1, wherein the second self-contained optics assembly comprises:

~~a mirrored polygon spinner for directing a second set of the first scanning light beams to a second set of the primary pattern mirrors,~~

~~a plurality of primary pattern mirrors for directing scanning light beams from the mirrored polygon spinner,~~

~~wherein the primary pattern mirrors direct first scanning light beams through the substantially vertical aperture to create a first group of the second scan lines,~~
~~and~~

18. (Original) The scanner of claim 17, wherein the mirrored polygon spinner comprises facets of different angles which divide the second scan lines into pairs.

19. (Original) The scanner of claim 17, wherein the

second group of the second scan lines scan the leading, trailing, customer, top, and bottom sides of the item.

20. (Original) The scanner of claim 17, wherein the first group of the second scan lines scan the top and customer sides of the item.

21. (Original) The scanner of claim 17, wherein the second self-contained optics assembly comprises sixteen primary pattern mirrors and six secondary pattern mirrors.

22. (Original) The scanner of claim 1, further comprising control circuitry in one of the first and second self-contained optics assemblies for obtaining bar code information from a first signal from the first self-contained optics assembly and a second signal from the second self-contained optics assembly.

23. (Original) The scanner of claim 1, wherein the first self-contained optics assembly substantially omnidirectionally scans the bottom side of the item.

24. (Original) The scanner of claim 1, wherein the second self-contained optics assembly substantially omnidirectionally scans the customer side of the item.

25. (Original) The scanner of claim 1, wherein at least one of the first and second self-contained optics assemblies additionally generate third scan lines for scanning an intermediate side of the item.

26. (Original) The scanner of claim 1, wherein the intermediate side comprises an intermediate bottom customer side.

27. (Original) The scanner of claim 1, wherein the first self-contained optics assembly substantially omnidirectionally scans the bottom side of the item, wherein the second self-contained optics assembly substantially omnidirectionally scans the customer side of the item, and wherein the first and second self-contained optics assemblies are capable of scanning truncated bar code labels.

28. (Currently amended) An optical scanner comprising:
a scanner housing;
a first optics assembly within the scanner housing including a horizontal aperture, wherein the first optics assembly generates first scan lines for scanning a bottom side, an operator side, a leading side, and a trailing side

of an item; and

a second optics assembly including a second housing within the scanner housing including a substantially vertical aperture, wherein the second optics assembly generates second scan lines for scanning a customer side, the leading side, the trailing side, and a top side of the item;

wherein the first and second optics assemblies include
a plurality of primary pattern mirrors for
directing first scanning light beams through the horizontal
and vertical apertures to create first groups of the first
and second scan lines; and

a plurality of secondary pattern mirrors for
reflecting second scanning light beams from the primary
pattern mirrors through the horizontal and vertical
apertures to create second groups of the first and second
scan lines;

wherein at least one of the first and second optics assemblies additionally generates third scan lines for scanning an intermediate side of the item.

29. (Original) The scanner of claim 28, wherein the intermediate side comprises an intermediate bottom customer side.

30. (Original) The scanner of claim 28, wherein the first optics assembly substantially omnidirectionally scans the bottom side of the item.

31. (Original) The scanner of claim 28, wherein the second optics assembly substantially omnidirectionally scans the customer side of the item.

32. (Original) The scanner of claim 28, wherein the first self-contained optics assembly substantially omnidirectionally scans the bottom side of the item, wherein the second self-contained optics assembly substantially omnidirectionally scans the customer side of the item, and wherein the first and second self-contained optics assemblies are capable of scanning truncated bar code labels.

33. (Currently amended) An optical scanner comprising:
a scanner housing;
a first optics assembly within the scanner housing including a horizontal aperture; and
a second optics assembly including a second housing within the scanner housing including a substantially vertical aperture;
wherein the first and second optics assemblies include

a plurality of primary pattern mirrors for
directing first scanning light beams through the horizontal
and vertical apertures to create first groups of the first
and second scan lines; and

a plurality of secondary pattern mirrors for
reflecting second scanning light beams from the primary
pattern mirrors through the horizontal and vertical
apertures to create second groups of the first and second
scan lines;

wherein the first and second optics assemblies are capable of scanning six sides of an item; and

wherein at least one of the first and second optics assemblies additionally generates third scan lines for scanning an intermediate side of the item.

34. (Original) The scanner of claim 33, wherein the first self-contained optics assembly substantially omnidirectionally scans a bottom side of the item, wherein the second self-contained optics assembly substantially omnidirectionally scans a customer side of the item, and wherein the first and second self-contained optics assemblies are capable of scanning truncated bar code labels.

35. (Original) The scanner of claim 33, wherein the

intermediate side comprises a side between a customer side and a bottom side of the item.

36. (New) An optical scanner comprising:

a scanner housing;

a first self-contained optics assembly including a first housing within the scanner housing including a horizontal aperture, wherein the first optics assembly generates first scan lines for scanning a bottom side, and further scanning an operator side, a leading side, and a trailing side of an item;

wherein the first self-contained optics assembly includes

a mirrored polygon spinner;

a plurality of primary pattern mirrors for directing scanning light beams from the mirrored polygon spinner;

wherein the primary pattern mirrors direct first scanning light beams through the horizontal aperture to create a first group of the first scan lines; and

a plurality of secondary pattern mirrors for reflecting second scanning light beams from the primary pattern mirrors through the horizontal aperture to create a second group of the first scan lines; and

a second self-contained optics assembly including a

second housing within the scanner housing including a substantially vertical aperture, wherein the second optics assembly generates second scan lines for scanning a customer side, and further scanning the leading side, the trailing side, and a top side of the item.

37. (New) The scanner of claim 36, wherein the mirrored polygon spinner comprises facets of different angles which divide the first scan lines into pairs.

38. (New) The scanner of claim 36, wherein the second group of the first scan lines scan the leading, trailing, customer, operator, and bottom sides of the item.

39. (New) The scanner of claim 36, wherein the first group of the first scan lines scan the operator and bottom sides of the item.

40. (New) The scanner of claim 36, wherein the first self-contained optics assembly comprises twelve primary pattern mirrors and six secondary pattern mirrors.

41. (New) An optical scanner comprising:
a scanner housing;
a first self-contained optics assembly including a

first housing within the scanner housing including a horizontal aperture, wherein the first optics assembly generates first scan lines for scanning a bottom side, and further scanning an operator side, a leading side, and a trailing side of an item; and

a second self-contained optics assembly including a second housing within the scanner housing including a substantially vertical aperture, wherein the second optics assembly generates second scan lines for scanning a customer side, and further scanning the leading side, the trailing side, and a top side of the item;

wherein the second self-contained optics assembly includes

a mirrored polygon spinner;
a plurality of primary pattern mirrors for directing scanning light beams from the mirrored polygon spinner;

wherein the primary pattern mirrors direct first scanning light beams through the substantially vertical aperture to create a first group of the second scan lines; and

a plurality of secondary pattern mirrors for reflecting second scanning light beams from the primary pattern mirrors through the substantially vertical aperture to create a second group of the second scan lines.

42. (New) The scanner of claim 41, wherein the mirrored polygon spinner comprises facets of different angles which divide the second scan lines into pairs.

43. (New) The scanner of claim 41, wherein the second group of the second scan lines scan the leading, trailing, customer, top, and bottom sides of the item.

44. (New) The scanner of claim 41, wherein the first group of the second scan lines scan the top and customer sides of the item.

45. (New) The scanner of claim 41, wherein the second self-contained optics assembly comprises sixteen primary pattern mirrors and six secondary pattern mirrors.